

## **Amendments to the Claims:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

1-26. (Cancelled)

27. (New) A portable apparatus for detecting atrial fibrillation by a patient, comprising:

a) means for repetitively obtaining a plurality of groups of n successive RR intervals from the patient's heart potentials, n being a natural number greater than 1;

b) means for producing a patient scatter plot, each point in the patient scatter plot representing one of said groups of n successive RR intervals;

c) means for comparing the patient scatter plot with at least one normal distribution scatter plot of a healthy heart to check the patient scatter plot for the presence of a prescribed geometrical point structure corresponding to one a plurality of predefined states of low to high risk of atrial fibrillation;

d) means for generating a state signal having one of a plurality of predetermined fixed values depending on the risk of atrial fibrillation from means c) such that the state signal has a first value if the risk of atrial fibrillation is low, a second value if the risk of atrial fibrillation is between low and high, and a third value if the risk of atrial fibrillation is high; and

e) a plurality of individually activatable visible displays corresponding in number to the number of possible state signal values, each visible display respectively by one of the possible state signal values, and means for activating the visible display corresponding to the value of the state signal generated by means d);

wherein the scatter plots are virtual scatter plots, and wherein the patient can independently identify the patient's health status by observing which visible display is activated.

28. (New) The apparatus of claim 27, wherein means c) further checks the patient scatter plot for the presence of a prescribed geometrical point structure corresponding to no risk of atrial fibrillation, wherein the state signal generated by means d) has a predetermined fixed value corresponding to no risk of atrial fibrillation.

29. (New) The apparatus of claim 28, wherein the apparatus includes a further individually activatable visible display which is activated by the state signal corresponding to no risk, visually indicating no risk of atrial fibrillation.

30. (New) The apparatus of claim 27, wherein the individually activatable visible displays comprise different LED visible displays.

31. (New) The apparatus of claim 30, wherein each LED visible display emits a unique color upon being activated.

32. (New) The device of claim 27, wherein the individually activatable visible displays respectively correspond to sectors of a pie chart of an LCD display and the LCD display displays the sector corresponding to the respective state signal.

33. (New) The apparatus of claim 27, wherein the individually activatable visible displays respectively correspond to bars of a bar chart of an LCD display and the LCD display displays the bar corresponding to the respective state signal.

34. (New) The apparatus of claim 27, comprising four individually activatable LED visible displays, one LED corresponding to a state of no risk of atrial fibrillation, a second LED corresponding to low risk of atrial fibrillation, a third LED corresponding to an intermediate risk of atrial fibrillation, and a fourth LED corresponding to a high risk of atrial fibrillation.

35. (New) The apparatus of claim 34, wherein each LED emits a different color.

36. (New) A method for detecting atrial fibrillation and alerting a patient to three degrees of risk of atrial fibrillation, comprising

- a) repetitively obtaining a plurality of groups of n successive RR intervals from a patient's heart potentials, n being a natural number greater than 1,
- b) defining a plurality of points in an n-dimensional space of numbers, each point representing one of said groups of n successive RR intervals, to form a characteristic distribution of said points, and calculating a virtual electronic plot based on said RR intervals,
- c) comparing said virtual electronic plot with at least one normal virtual scatter plot distribution derived from a healthy heart to electronically check deviation of said characteristic distribution with said normal distribution, wherein a first relative degree of deviation corresponds to a low risk of atrial fibrillation, a second relative degree of deviation corresponds to a risk of atrial fibrillation between low and high, and a third relative degree of deviation corresponds to a high risk of atrial fibrillation, and
- d) generating a state signal having one of a plurality of predetermined fixed values depending on the risk of atrial fibrillation from step c) such that the state signal has a first value if the risk of atrial fibrillation is low, a second value if the risk of atrial fibrillation is between low and high, and a third value if the risk of atrial fibrillation is high, and
- e) activating one of a plurality of individually activatable visible displays corresponding in number to the number of possible state signal values, each visible display respectively associated with one possible state signal value, such that the visible display corresponding to the value of the generated state signal is activated.

37. (New) The method of claim 36, wherein the individually activatable visible displays comprise different LED visible displays.

38. (New) The method of claim 36, wherein each LED visible display emits a unique color upon being activated.

39. (New) The method of claim 36, wherein the individually activatable visible displays respectively correspond to sectors of a pie chart of an LCD display and the LCD display displays the sector corresponding to the respective state signal.

40. (New) The method of claim 36, wherein the individually activatable visible displays respectively correspond to bars of a bar chart of an LCD display and the LCD display displays the bar corresponding to the respective state signal.

41. (New) The method of claim 36, wherein the individually activatable visible displays comprise four individually activatable LED visible displays, one LED corresponding to a state of no risk of atrial fibrillation, a second LED corresponding to low risk of atrial fibrillation, a third LED corresponding to an intermediate risk of atrial fibrillation, and a fourth LED corresponding to a high risk of atrial fibrillation.

42. (New) The method of claim 36, wherein each LED emits a different color.